

WHAT IS CLAIMED IS:

1. A method of constructing and managing an overlay multicast tree on the Internet, the overlay multicast tree
5 including a sender, one or more receivers and one or more agents for relaying data, comprising:

the first step of a new participant requesting access to the overlay multicast tree from a tree manager while transmitting network characteristic information thereof to the
10 tree manager;

the second step of determining an optimal parent node in consideration of the network character information of the new participant having requested access at the first step and network characteristic information of agents participating in
15 a currently constructed overlay multicast tree, and transmitting information of the determined parent node to the new participant; and

the third step of the new participant establishing data channels on the basis of the information of the determined
20 parent node.

2. The method as set forth in claim 1, further comprising the fourth step of the agent transmitting information of child nodes currently held thereby to the tree manager at regular
25 intervals after having accessed the overlay multicast tree

through the first, second and third steps, and the tree manager collecting the transmitted information of child nodes and checking and managing status of the overlay multicast tree.

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3. The method as set forth in claim 1 or 2, wherein the new participant provides subnet ID information of a network thereof when requesting access to the overlay multicast tree from the tree manager.

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4. The method as set forth in claim 1 or 2, wherein the second step comprises the steps of:

searching nodes on a currently constructed overlay multicast tree for any nodes having the same subnet ID as the
15 new participant;

selecting a node having a minimal tree level or minimal number of child nodes from among the nodes having the same subnet ID if one or more nodes having the same subnet ID are searched for;

20 selecting a node having a minimal tree level or minimal number of child nodes from among all nodes of the overlay multicast tree if one or more nodes having the same subnet ID are not searched for; and

determining the selected node as a parent node and
25 notifying the new participant of the selected node via a

response message.

5 5. The method as set forth in claim 2, wherein the fourth step is performed in such a way that each of the nodes having accessed the overlay multicast tree starts a status report timer with a status report interval set, transmits information of child nodes connected thereto to the tree manager when the status report timer reaches the set interval, and restarts the status report timer.